

**Further Notes on the Forest Insects of Molokai**

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(Presented at the meeting of Dec. 10, 1928)

A second expedition to the mountains of east Molokai was made by the authors, from Bernice P. Bishop Museum, July 17 to 31, 1927. Through the courtesy of Mr. James Munro, headquarters were made in Mr. Munro's mountain house, at an elevation of 1500 feet on the ridge between Kainalu and Kahawaiiki gulches, at the southeastern end of the island. From here excursions were made, as weather permitted, into the surrounding wooded region. Due to the precipitous walls of the gulches, the dense character of the undergrowth, and the wetness, only a comparatively small area was explored, and the highest elevation reached was only 3100 feet, just east of Puu Ohelo. But an interesting and representative collection of insects was made, together with numerous notes concerning their relation to the native flora.

The mountain house is located on a small flat, on the edge of the native forest, just above the dry, open, grass and weed covered forehill, the lower slope of which is planted to pineapples. On a second small flat, behind and above the house is an area of open bogs, with patches of bananas and scattered scrub. Above this the numerous small ridges are thickly covered with such plants and trees as *Metrosideros*, *Byronia*, *Coprosma*, *Suttonia*, *Gouldia*, *Pelea*, *Straussia*, *Perrottetia*, *Broussaisia*, *Antidesma*, *Wikstroemia*, *Cheirodendron* and *Cibotium* tree ferns, intertwined with ieie vine (*Freycinetia*), *Smilax*, maile (*Alyxia*), staghorn and other ferns, herbs, grass, and weeds. Here and there was found a single specimen of some unusual tree, such as a large *Tetraplasandra*, on the flat, near the house.

Higher up, the forest becomes more luxuriant; because of the moisture, the trees having numerous epiphytes, and being festooned with moss and hepatic. Many of the species of plants, found lower down, persist, but staghorn fern ceases to grow, lehua (*Metrosideros*) is no longer dominant, and moisture loving species are added to the list. The principal trees of the upper rain forest are

here: Straussia, Pelea, Cheirodendron, Suttonia, Gouldia, Coprosma, Pipturus; and beneath them an undergrowth of species of Astelia, tall Peperomias, Cibotium and other ferns, festoons of Smilax, and dense tangles of ieie vine (Freycinetia).

A little collecting was done in the lowlands, both at Kainalu and about Kaunakakai, especially in the homestead area to the west. This collecting was mainly along the roadsides and in cultivated fields and weed patches. In this way a few new records of immigrant arrivals were made.

Mr. A. M. Adamson, entomologist with the Pacific Entomological Survey, accompanied by Dr. C. Montague Cooke, Jr., made a trip to the Molokai Mountains from the Bishop Museum, June 18 to 23, 1928. He collected insects in the region about the head of Waikolu Valley, visited by the authors, December, 1925 (See Proceedings Hawaiian Entomological Society, Vol. 6, pp. 411-22, 1927). Determinations of many of the specimens collected by Mr. Adamson are included in the following list. For these the locality is given. Those without locality are from the Kainalu region and were collected by the authors.

## HYMENOPTERA

### ICHNEUMONIDAE

*Evania sericea* Cameron, 1.

- ✓ *Amblyteles koebeli* (Swezey), 1 Kawela (Adamson).
- ✓ *Echthromorpha fuscator* (Fabricius), 19; 4 Kamiloloa, Waikolu (Adamson), 1 bred ex pupa of *Amorbia emigratella* by Adamson.
- ✓ *Ephialtes hawaiiensis* (Cameron), 1; 1 Kamiloloa (Adamson).
- ✓ *Pristomerus hawaiiensis* Perkins, 21, one ex *Heterocrossa trigononotata*.  
2 ex *Heterocrossa* in Clermontia fruits.
- ✓ *Angitia blackburni* (Cameron), 1 Kaunakakai; 1 Waikolu (Adamson).
- ✓ *Cremastus hymeniae* Viereck, 8, 2 ex *Omiodes scotaea*.
- ✓ *Hyposoter exiguae* (Viereck), 1 Waikolu (Adamson).
- Atrometus molokaiensis* Ashmead, 1.
- Atrometus flavifrons* Ashmead, 1.
- Casinaria infesta* (Cress.), 1 Kamiloloa (Adamson).

### ALYSIIDAE

*Aphaereta muscae* Ashmead, 4.

### BRACONIDAE

*Chelonus blackburni* Cameron, 2; 1 Waikolu (Adamson).

*Lysiphlebus testaceipes* Cresson, 1 ex *Aphis medicaginis* on *Phaseolus semi-erectus* at sea level.

## BETHYLIDAE

*Sclerodermus* sp., 21 ex *Neoclytarlus* in *Smilax*.

*Sierola* spp. (2 or 3 species), 8.

*Epyris extraneus* Bridwell, 1, at sea level.

## DRYINIDAE

*Pseudogonatopus perkinsi* (Ashmead), 4.

## SCELIONIDAE

*Anteris* sp., 1.

## PLATYGASTERIDAE

*Aphanomerus pusillus* Perkins, 3 ex eggs of *Siphanta acuta*.

## FIGITIDAE

*Hypodiranchus* sp. ? 11.

*Eucolia impatiens* (Say), 1.

## CHALCIDIDAE

*Brachymeria obscurata* (Walker), 12, mostly in tomato patch at coast.

2 Kamiloloa (Adamson).

*Stomatocerus pertorvus* Gir., 1 tomato patch, 2 pineapple fields.

## PTEROMALIDAE

*Zatropis tortricidis* Crawford, 1 ex *Cremastobombycia lantanella*.

## EURYTOMIDAE

*Eurytoma* sp., 1.

## MISCOGASTERIDAE

*Tomocera californica* Howard, 1; 1 Kawela (Adamson).

*Allolelaps* sp. ? 1.

## SPALANGIIDAE

*Spalangia cameroni* Perkins, 8 ex hornfly puparia in cow manure.

## EUPELMIDAE

*Eupelmus ombrias* Perkins, 1.

*Eupelmus parombrias* Perkins, 1.

*Eupelmus* sp., 1.

*Eupelmus* sp., 1 Kawela (Adamson).

*Eupelmus* sp., 1 ♂ ex *Neoclytarlus* in *Smilax*.

## ENCYRTIDAE

*Encyrtus infelix* (Embleton), 1.

*Anagyrus major* Perkins, 2.

*Anagyrus nigricornis* Timberlake, 3 on *Metrosideros*.

*Nesencyrtus kaalae* (Ashmead), 15 ex larva of *Nesoprosopis caeruleipennis* in dead *Metrosideros*.

*Pauridia peregrina* Timberlake, 1.

*Microterys kotinskyi* (Fullaway), 5.

*Plagiomerus hospes* Timberlake, 1.

*Pseudaphycus utilis* Timberlake, 3 ex *Pseudococcus nipae* on guava.

Yellow encyrtid, 1.

## APHELINIDAE

*Aphelinus gossypii* Timberlake, 1.

## EULOPHIDAE

*Secodella metallica* (Ashmead), 2 ex Lepidopterous leaf-miner in Clermontia; 1 Kawela (Adamson).  
*Melittobia hawaiiensis* Perkins, 20 ex pupa of *Pachodynerus simplicicornis*.  
*Pseudophelminus vagans* Timberlake, 1.  
*Sympiesis* sp., 2.  
*Sympiesis* sp., 14.  
*Eulophus* sp. 1.  
*Eulophus* sp. 3.  
 Unidentified euplid, 8.  
 Unidentified euplid, 1.

## TRICHOGRAMMATIDAE

*Trichogramma minutum* Riley. Parasite of eggs of *Amorbia emigratella*.  
*Trichogramma semifumatum* (Perkins), 11 ex eggs of *Scotorythra* sp.

## MYMARIDAE

*Polyneuma terrestre* Perkins, 5 on Metrosideros and Wikstroemia.  
*Polyneuma rubriventris* Perkins, 2 on Gouldia.  
*Polyneuma pyrophila* Perkins, 1 on window of cabin.  
*Polyneuma jassidarum* Perkins, 1 on Sadleria.  
*Polyneuma* n. sp., 1.

## FORMICIDAE

*Ponera perkinsi* Forel, 2.  
*Tetramorium guineense* Fab., 6.  
*Cardiocondyla wroughtonii* var. *hawaiiensis* Forel, 17 Kaunakakai, in alfalfa fields; 20 Kainalu.  
*Cardiocondyla nuda* var. *minutior* Forel, 7; 1 Kaunakakai.  
*Prenolepis bourbonica* race *hawaiiensis* Forel, 31.  
*Technomyrmex albipes* (Smith), 15.  
*Pheidole megacephala* (Fabr.), 1.  
*Plagiolepis mactavishi* Wheeler, 4.  
*Leptogenys falcigera* var. *insularis* Forel, 1 sea level.

## MIMÉSIDAE

*Nesomimesa nitida* Perkins, 1 Kamiloloa (Adamson).

## TRYPOXYLONIDAE

*Pison hospes* Smith, 2.

## CRABRONIDAE

*Hylocrabro tumidoventris* (Perkins), 7; 1 ex nest in dead lehua; 1 Waikolu (Adamson).  
*Xenocrabro unicolor* (Smith), 3.  
*Xenocrabro molokaiensis* (Perkins), 6 E. Kawela (Adamson).

## VESPIDAE

*Polistes aurifer* Sauss. 2; 2 Kamiloloa (Adamson).  
*Polistes macaensis* (Fabr.) 1.  
*Polistes hebraeus* (Fabr.) 1.

## EUMENIDAE

*Odynerus molokaiensis* Perkins, 1 Kamiloloa (Adamson); 1 Halawa (Swezey).  
*Odynerus instabilis* Perkins, 2 Kamiloloa (Adamson).  
*Odynerus ecostatus* Perkins, 1.  
*Odynerus camelinus* Perkins, 1.  
*Odynerus purpurifer* Perkins, 13, sea level to 2200 feet; 2 ex nest in dead lantana.  
*Odynerus nigripennis* (Holm.), 1 at sea coast.  
*Odynerus petrobius* Perkins, 1 at sea coast.  
*Pachodynerus simplicicornis* (Sauss.), nest in window of cabin; 1 pineapple field; 2 Kaunakakai.

## PSAMMOCHARIDAE

*Anoplus luctuosus* (Cress.), 3; 5 Waikolu, Kamiloloa (Adamson).

## AMPULICIDAE

*Dolichurus stantoni* (Ashmead), 1.

## SCOLIIDAE

*Scolia manilae* Ashmead, sea level to 900 feet; in pineapple field.

## PROSOPIDAE

*Nesoprosopis facilis* Smith, 1 ex nest in dead twig; 4 E. Kawela, 2 Kamiloloa, 5 Waikolu (Adamson).  
*Nesoprosopis caeruleipennis* Perkins, 10, 2 ex nest in dead lehua.

## MEGACHILIDAE

*Megachile palmarum* Perkins, 3 Kaunakakai.

## XYLOCOPIDAE

*Xylocopa varipuncta* Patton, 1, Kaunakakai, in alfalfa field.

## COLEOPTERA

## CARABIDAE

*Colpodiscus lucipetens* (Blackburn), 16 at light and in dead Tetraplasandra.  
*Atelothrus platynoides* Sharp, 43 ex Freycinetia.  
About a dozen other species from the Kainalu region.  
Three or four species, Kawela, Waikolu, Kamiloloa (Adamson).

## HYDROPHILIDAE

*Hydrobius semicylindricus* (Eschscholtz), 1 in pool.  
*Dactylosternum subquadratum* (Fairm.), 6 in banana stems.  
*Cercyon quisquilius* (Linn.), 21 in cowdung.

## DERMESTIDAE

*Dermestes vulpinus* Fabr., 1 Kaunakakai (Adamson).

## CUCUJIDAE

*Cryptamorpha desjardinsi* (Guer.), 4 at light; 1 Kaunakakai (Adamson).  
*Silvanus surinamensis* (Linn.), 1 in dried figs from Honolulu.

## NITIDULIDAE

*Orthostolus robustus* (Sharp), 2 ex dead lobelioid.  
*Orthostolus germanus* Sharp, 9 ex Freycinetia.  
*Eupetinus impressus* (Sharp), 16 ex Freycinetia.  
*Nitidulid*, 2 on banana.  
 Three or four other native species, 14.  
*Carpophilus humeralis* (Fabr.), 1.

## STAPHYLINIDAE

*Thoracophorus blackburni* (Sharp), 2 ex dead Coprosma.  
*Oxytelus sculptus* Grav., 15 in cowdung.  
*Osorius rufipes* Mots., 6 ex cowdung, Sadleria, etc.  
*Nesomedon brunneascens* Sharp, 1 at light.  
*Philonthus scybalariae* Nord., 5 in cowdung.  
*Myllaena familiaris* Sharp, 3 ex Freycinetia.  
*Oligota* sp., 1 ex Freycinetia.  
 Two or three other staphylinids.

## COCCINELLIDAE

*Coclophora inaequalis* (Fabr.), 4 on Metrosideros, etc.; 2 Waikolu and Kamiloloa (Adamson).  
*Platyomus lividigaster* Muls., 1 at sea level.  
*Rhisobius ventralis* Er., 2; 1 Kamiloloa (Adamson).  
*Cryptolaemus montrouzieri* Muls., 5 on Metrosideros, etc.; 4 Kamiloloa (Adamson).  
*Hyperaspis jocosa* (Muls.), 3 on lantana.  
*Dionus notescens* (Blackburn), 4 Kaunakakai and Kainalu, at sea level, on aphid on *Cassia occidentalis*.  
*Scymnus occellatus* Sharp, Kaunakakai, on alfalfa.

## ELATERIDAE

*Simodactylus cinnamomeus* (Boisduval), 5 on Metrosideros and pigeon peas.  
*Monocrepidius exsul* Sharp, 6 on Metrosideros and at light.

## SCARABAEIDAE

*Aphodius lividus* Oliv., 2 at light.  
*Adoretus sinicus* Burm., 5 at light.

## CHRYSOMELIDAE

*Epitrix parvula* (Fabr.), 8 on tomato vines at sea level.

## TENEBRIONIDAE

*Gonocephalum seriatum* (Boisduval), 5 Kamiloloa (Adamson).

## CIOIDAE

*Cis* spp. (2 or 3 species), from Freycinetia, Metrosideros and Sadleria.  
*Apterocis* sp.

## ANOBIIDAE

*Mirosternus* sp., 1; 1 Makakupaia (Adamson).

## CERAMBYCIDAE

*Neoclytarlus* sp. Reared from dead stems of Smilax.

## BRUCHIDAE

*Megacerus alternatus* Bridwell, 5 ex seeds of *Ipomoea pes-caprae*.

## ANTHRIBIDAE

*Araeocerus fasciculatus* (De Geer), 11, sea level to 100 feet, in husk of kukui nut, etc.; 1 Kamiloloa (Adamson).

## CURCULIONIDAE

*Pantomorus godmani* (Crotch), 1; 12 Kamiloloa (Adamson).

*Acalles*, sp., 1 beaten from Alyxia.

*Polytus mellerborgi* (Boh.), 7 ex banana plants.

*Dryophthorus squalidus* Sharp, 11 ex dead Clermontia and Cheirodendron.

*Dryophthorus gravidus* Sharp, 1 ex dead Clermontia.

*Dryophthorus declivis* Sharp, 6 ex dead Coprosma and Cheirodendron.

*Dryophthorus modestus* Sharp, 9 in dead Coprosma and in dead frond stems of *Cibotium menziesii*, and dead Cheirodendron.

*Dryophthorus insignis* Sharp, 6 ex dead Coprosma and Cheirodendron, and in dead frond stems of *Cibotium menziesii*.

*Pentarthrum prolixum* Sharp, 22 ex dead frond stems of *Cibotium chamissoi* and *Cibotium menziesii*.

*Oxydema fusiforme* Woll., 5 in drift wood.

*Nesotocus* n. sp., 3, larva in pith of dead Tetraplasandra.

*Oodemas corticis* Perkins, 3 ex dead Clermontia; 2, Waikolu under bark of lobelioid (Adamson).

*Oodemas*, 4 undetermined species, 16.

## SCOLYTIDAE

*Xyleborus* sp., 3 ex Straussia.

## PROTERHINUS

*Proterhinus*, about a dozen species on several different trees. Being studied by Dr. Perkins.

## LEPIDOPTERA

Unless otherwise indicated, the specimens were taken at light at the cabin, Kainalu, about 1500 feet elevation.

## CARADRINIDAE

*Eriopygodes euclidas* (Meyrick), 1.

*Agrotis chersotoides* (Butler), 1.

*Feltia dislocata* (Walker), 1 Kaunakakai.

*Euxoa hephaestaea* (Meyrick), 2.

*Euxoa charmocrita* Meyrick, 2.

## PLUSIADAЕ

*Plusia chalcites* Esp., 1.

*Nesamiptis obsoleta* (Butler), 3.

*Adrapsa manifestalis* (Walker), 1.

## HYDRIOMENIDAE

*Eucymatoge monticolans* (Butler), 8; two of these were reared from larvae on lehua leaves. Similar larvae were found feeding on lehua flowers, but failed to rear.

## SELIDOSÉMIDAE

*Sisyrophyta gomphias* Meyrick, 4.  
*Scotorythra syngonopa* Meyrick, 1 reared from larva on *Antidesma platyphyllum*.  
*Scotorythra diceraunia* Meyrick, 2.  
*Scotorythra oxyphractis* Meyrick, 2.  
*Scotorythra macrosoma* Meyrick, 1.  
*Scotorythra brachytarsa* Meyrick, 3.  
*Scotorythra rara* (Butler), 4.

## SPHINGIDAE

*Celerio perkinsi* Swezey, 2, one of them reared from a green caterpillar on *Straussia kauiana*.

## LYCAENIDAE

*Thecla echion* Linn., 1 reared from lantana flowers.

## PHYCITIDAE

*Genophantis iodora* Meyrick, 1.

## PYRAUSTIDAE

*Omiodes demaratalis* (Walker), 1 caught in grassland.  
*Omiodes musicola* Swezey, 1.  
*Omiodes asaphombra* Meyr., Larva on *Joinvillea*.  
*Phlyctaenia hyacinthias* Meyrick, 1.  
*Scoparia rhombias* Meyrick, 1.

## GELECHIADAE

*Aristotelia* sp. Leafminer in *Gouldia*.  
*Aristotelia* sp. Leafminer in *Coprosma*.  
*Aristotelia* sp. Leafminer in *Antidesma*.  
*Catamempsis decipiens* Walsm. Larvae in crown of *Freycinetia*.

## HYPONOMEUTIDAE

*Neelysia argyresthiella* Walsingham, 4.  
*Hypsomocoma phalacra* Walsingham, 2.  
*Hypsomocoma lupella* Walsingham, a larval case collected on *Freycinetia arnotti*.  
*Hypsomocoma chilonella* Walsingham, 2 reared from larvae in dead *Smilax sandwicensis* and *Coprosma*.  
*Hypsomocoma chilonella ocellata* Walsingham, 1 reared from dead *Wikstroemia*.  
*Hypsomocoma chilonella venosa* Walsingham, 1 reared from dead *Wikstroemia*.  
*Hypsomocoma insinuatrix* Meyrick, 2 reared from dead *Smilax sandwicensis*.  
*Hyperdasys cryptogamiellus* Walsingham, 2 reared from dead lehua and lan-tana.  
*Euperissus cristatus* (Butler), 2 reared from pith of dead *Freycinetia arnotti*.  
*Diplosara lignivora* (Butler), larval case in rotten wood of *Tetraplasandra hawaiiensis*.

## CARPOSINIDAE

*Heterocrossa trigononotata* Walsingham, reared from terminal bud of lehua.

## TORTRICIDAE

*Amorbia emigratella* Busck, 1.

## TINEIDAE

*Opostega* sp. Leafminer in Pelea.

*Philodoria splendida* Walsingham, 10 swept from foliage of lehua; a leaf-miner on that tree.

*Philodoria auromagnifica* Walsingham, 2 leafminers reared from leaf of Suttonia.

*Philodoria floscula* Walsingham, 1 collected on *Pipturus albidus*. Probably a leafminer on it as the leaves had mines in them, but none was reared.

*Bedellia oplismeniella* Swezey, 3 reared from mines in leaves of a grass, *Oplismenus compositus*.

*Opogona omoscopa* (Meyrick), 1. Its larvae common in rotten bark and wood.

*Cremastobombycia lantanella* Busck, 3; leafminer in lantana.

## CYGNODIIDAE

*Petrochroa dimorpha* Busck, 1.

## DIPTERA

## PSYCHODIDAE

*Psychoda alternata* Say, 14 ex ferns.

## CHIRONOMIDAE

*Chironomus hawaiiensis* Grimshaw, 2 near Kaunakakai about flume, in which the larvae (blood worms) were numerous.

*Ceratopogon* sp. 22.

## CULICIDAE

*Aedes albopictus* (Skuse) [= *A. scutellaris*], 1.

*Culex quinquefasciatus* Say, 3.

## MYCETOPHILIDAE

*Sciara molokaiensis* Grimshaw, 6.

## STRATIOMYIDAE

*Neoexaireta spinigera* (Wied.), 11, 2 Waikolu (Adamson).

## DOLICHOPODIDAE

*Lianculus metallicus* Grimshaw, 1 Kamiloloa (Adamson).

*Dolichopus exsul* Aldrich, 97, very abundant about the open bogs at 1500 feet, and numerous over whole region up to 2500 feet.

*Medeterus* sp., 3 Waikolu (Adamson).

*Dolichopodid*, 64.

## PIPUNCULIDAE

*Pipunculus molokaiensis* Grimshaw, 12.

Two other species, 3.

## SYRPHIDAE

*Volucella obesa* (Fabr.), 4 Waikolu (Adamson).  
*Eristalus arvorum* (Fabr.) 2, 2 Waikolu (Adamson).  
*Eumerus marginatus* Grimshaw, 2.  
*Syritta oceanica* (Macquart), 2.  
*Ischiodon scutellaris* (Fabr.) [known as *Xanthogramma grandicornis*], 1  
 Kaunakakai.  
*Allograpta obliqua* (Say), 3 Kamiloloa, 2 Waikolu, 1 Kawela (Adamson).

## TACHINIDAE

*Archytas cirphis* Curran, 4, 1 Kamiloloa (Adamson).

## SARCOPHAGIDAE

*Sarcophaga pallinervis* Thomson, 17, 1 Kawela, 1 Waikolu, 1 Kamiloloa  
 (Adamson).

## MUSCIDAЕ

*Haematobia irritans* (Fabr.), the horn fly, 9.  
*Musca domestica* Linn. 1.

## CALLIPHORIDAE

*Chrysomyia megacephala* Fabr., 1 Waikolu (Adamson).  
*Prosthetochaeta robusta* Grimshaw, 49.  
*Discritomyia*, 2 species, 10.

## ANTHOMYIDAE

*Lispocephala pallidibasis* Malloch, or near it, 9.  
*Lispocephala* 2 spp., 2.  
*Limnophora arcuata* Stein, 9.  
*Fannia canicularis* (Linn.), 1, 9 Waikolu (Adamson).

## BORBORIDAE

*Limosina venalicia* (Osten-Sacken), 7.  
*Leptocera ferruginata* Stenh. 2.

## TRYPETIDAE

*Eutreta xanthochaeta* Aldrich, 4. (the lantana gall fly).

## EPHYDRIDAE

*Brachydeutera hebes* Cresson, 1.

## DROSOPHILIDAE

*Drosophila molokaiensis* Grimshaw, 1.  
*Drosophila* sp. near *olaee* Grimshaw, 1.  
*Drosophila mulleri*, ? Sturtevant, 12 Waikolu (Adamson).  
*Drosophila melanogaster* Meigen, 17 Waikolu (Adamson).

## AGROMYZIDAE

*Agromyza pusilla* Meigen, 1 Kaunakakai, from Alfalfa (Serpentine leaf-miner).  
*Agromyza* sp. near *pusilla* Meigen, 5.

## HEMIPTERA

## CIMICIDAE

*Oechalia griseus* (Burm.), 2.  
*Oechalia* nymphs, Kamiloloa (Adamson).

## LYGAEIDAE

*Corizus hyalinus* (Stal.), 2 at sea level.

## MYODOCHIDAE

*Metrarga contracta* Blkb., 1 on Freycinetia.  
*Sephora criniger* (White), 2 (Adamson).  
*Nesocymus calvus* (White), 12 Kamiloloa, Makakupaia (Adamson).  
*Nysius* sp., 7 on Pipturus.  
*Nysius* sp., 2 on Sadleria.  
*Nysius* sp., 1 on Freycinetia.  
*Nysius* sp., 8 on Scaevola, Gouldia, Sadleria, and in pineapple field; 1 at Kaunakakai.  
*Nysius* sp., 2 on Metrosideros.  
*Nysius*, 2 or 3 species. Kamiloloa, Makakupaia (Adamson).

## TINGITIDAE

*Teleonemia lantanae* Distant, 5 on lantana.

## NABIDAE

*Reduviolus capsiformis* (Germ.), 1 Kaunakakai on alfalfa.  
*Reduviolus blackburni* (White), 1 East Kawela (Adamson).  
*Reduviolus tarai* Kirkaldy, 2 Kamiloloa (Adamson).  
*Reduviolus subrufus* (White), 1 on ferns.  
*Reduviolus procellaris* Kirkaldy, 6 on Freycinetia, etc.

## GERRIDAE

*Microvelia vagans* White, 32 on pool at cabin.

## REDUVIIDAE

*Zelus reynardii* Kol., 2; 1 at Kaunakakai.

## MIRIDAE

*Tichorhinus* sp., 13 on Straussia.  
*Tichorhinus* sp., 1 on Straussia.  
*Tichorhinus* sp., 3 on Alyxia, Sadleria.  
*Tichorhinus* sp., 4 on Sadleria, Freycinetia, etc.  
*Kamehameha lunalilo* Kirkaldy, 3.  
*Hyalopeplus pellucidus* (Stal.).  
*Nesiomiris hawaiiensis* Kirk., 38 and 3 nymphs on *Tetraplasandra hawaiiensis*.  
*Engytatus geniculatus* Reuter, 18 on tomato vines near coast.  
Mirids, 2 or 3 species, (Adamson).  
Mirid (?), 1.

## ACANTHIADAE

*Acanthia exulans* var. *molokaiensis* Kirk., 1 (Adamson).  
*Acanthia humifera* Kirk., 5 Kamiloloa, Makakupaia (Adamson).

## NOTONECTIDAE

*Buenoa pallipes* (Fab.), 33 in pool near sea level.

## HOMOPTERA

## FLATIDAE

*Siphanta acuta* (Walk.), 9 on Metrosideros, Tetraplasandra, guava, etc.; 15 and 8 nymphs, Kawela, Kamiloloa, Makakupaia .(Adamson).

## CIXIIDAE

*Iolania* sp., 8 on Straussia, Freycinetia and *Cibotium menziesii*.

*Oliarus hevaheva* Kirk., 2 (Adamson).

*Oliarus euphorbiae* Giffard, 3 (Adamson).

*Oliarus* sp., 36 on Aspidium, Sadleria, *Cibotium menziesii*.

*Oliarus* sp., 2 on Sadleria.

*Oliarus* sp., 3.

*Oliarus* sp., 3.

*Oliarus* sp., 1.

## DELPHACIDAE

*Leialoha* sp., 16 on Metrosideros; 2 on Metrosideros, at Kamiloloa (Adamson).

*Nesodryas* sp., 1 on Antidesma.

*Ilburnia picturi* (Kirk.), 2 on Pipturus; 2 on Pipturus at Kamiloloa (Adamson).

*Ilburnia* sp., 3 on Freycinetia; 1 on Strongylodon.

*Ilburnia* sp., 2 on Clermontia.

*Ilburnia* sp., 18 on Sadleria.

*Ilburnia* sp., 15 on Aspidium, Gleichenia, Sadleria.

## JASSIDAE

*Nesophrosyne ponapona* Kirk., 5 Kamiloloa, 4 Kawela, 1 Makakupaia, on Pipturus (Adamson).

*Nesophrosyne* sp., 1 Kawela (Adamson).

*Nesophrosyne* sp., 4 on Antidesma, Suttonia.

*Nesophrosyne* sp., 1 on Broussaisia.

*Nesophrosyne* sp., 1 on Byronia.

*Nesophrosyne* sp., 5 on Straussia.

*Nesophrosyne* sp., 1 on Gouldia.

*Nesophrosyne* sp., 5 on Wikstroemia.

*Nesophrosyne* sp., 7 on Gleichenia, 3 Suttonia, 2 Gouldia, 1 Straussia, 1 Wikstroemia, 1 Freycinetia, 2 Metrosideros, 1 ferns.

*Nesophrosyne* sp., 8 on Aspidium, 7 on other ferns.

Amaranth jassid, 5 at Kaunakakai.

## PSYLLIDAE

*Kuwayama gracilis* Crawford, numerous on Metrosideros.

*Triosa* sp., numerous on Metrosideros.

*Hevaheva* sp., nymphs in pits on upper surface of leaves of Pelea.

An undetermined new species very abundant on *Tetraplasandra hawaiiensis*, the nymphs on the leaves resembling coccids.

## COCCIDAE

*Saissetia* sp., on Tetraplasandra, Straussia, Clermontia.  
*Ceroplastes rubens* Maskell., on Metrosideros, Straussia, Antidesma.  
*Pseudococcus longispinus* (Targ.), on Tetraplasandra.  
*Pseudococcus montanus* Ehrhorn, on Freycinetia.

## NEUROPTERA

## HEMEROBIIDAE

*Chrysopa microphya* McLach., 4.  
*Chrysopa lanatus* Banks, 1 on alfalfa at Kaunakakai.  
*Nesomicromus vagus* Perkins, 1 on Straussia.  
*Micromus vinaceous* Gerst., 4.

## MYRMELIONIDAE

*Formicaleo perjurus* (Walker), 1 in dry ravine at Kaunakakai.

## TERMITIDAE

*Neotermes connexus* Snyder, numerous in dead wood of nearly every kind of dead tree: Metrosideros, Straussia, Perrottetia, Freycinetia, Byronia, Coprosma, Clermontia, Gouldia, Tetraplasandra, Broussaisia, guava and lantana.  
*Kalotermes immigrans* Snyder, numerous in dead algaroba trees at Kaunakakai.

## CORRODENTIA

## PSOCIDAE

*Psocus distinguendus* Perkins, 4 on Metrosideros and Sadleria.  
*Psocus lanaiensis* Perkins, 4.  
 Undetermined psocids, 3 or 4 species.

## ODONATA

## LIBELLULIDAE

*Pantala flavescens* Fab., 1.  
*Nesogonia blackburni* (McLach.), 1.

## AGRIONIDAE

*Agrion blackburni* McLach., 5.  
*Agrion molokaiense* Perkins, 2.  
*Agrion deceptor* McLach., 9.  
*Agrion amauropyrum* Perkins, 5.

## ORTHOPTERA

## BLATTIDAE

*Allacta similis* (Sauss.), 11.

## TETTIGONIIDAE

*Bansa molokaiensis* (Perkins), 5.  
*Conocephalus saltator* (Sauss.), 1.  
*Atractomorpha ambigua* Bol., 1 at coast.

## CRYLLIDAE

*Paratrigonidium pacificum* (Scud.), 34 mostly on ferns. One with a nematode worm.

*Leptogryllus apicalis* Perkins, 3.

*Leptogryllus deceptor* Perkins, 1.

## DERMAPTERA

## LABIDURIDAE

*Euborellia annulipes* (Lucas), 1.

*Chelisoches morio* (Fab.), 1.

*Anisolabis eteronoma* Borelli, 9 Kamiloloa (Adamson).

## Insects Listed per Host Tree

## METROSIDEROS COLINA POLYMORPHA

**Hymenoptera**

*Nesoprosopis caeruleipennis* Perkins, nest in rotten branch.

*Hylocabro tumidoventris* (Perkins), nest in rotten branch, stored with dolichopodid flies.

*Odynerus purpurifer* Perkins, caught on blossoms.

*Pristomerus hawaiiensis* Perkins, parasite on *Heterocrossa trigononotata* in buds.

*Nesencyrtus kaalae* (Ashm.), parasite of larva of *Nesoprosopis caeruleipennis*.

*Anagyrus nigricornis* Timberlake, swept from foliage. A mealybug parasite.

*Sympiesis* sp., parasite of psyllids.

*Polynema terrestris* Perkins, swept from foliage. Parasite on leafhopper eggs.

**Coleoptera**

*Proterhinus* sp., in pith of dead twigs.

*Dryophthorus* sp., larvae in dead wood.

**Lepidoptera**

*Eucymatoge monticolans* (Butl.), larvae on new leaves and on flowers.

*Heterocrossa trigononotata* Walsm., larvae in terminal buds.

*Hyperdasys cryptogamiellus* Walsm., larvae in rotten wood.

*Philodoria splendida* Walsm., leafminer.

**Hemiptera**

*Nysius* sp., on foliage.

*Siphanta acuta* (Walker), on foliage and young twigs.

*Leialoha* sp., on foliage.

*Nesophrosyne* sp., on foliage.

*Kuwayama gracilis* Crawford, on leaves, without galls.

*Trioza* sp., in galls on leaves, numerous.

*Ceroplastes rubens* Maskell, on leaves.

**Neuroptera**

*Neotermes connexus* Snyder, in dead wood.

**Corrodentia**

*Psocus distinguendus* Perkins, on bark.

**EUGENIA SANDWICENSIS****Coleoptera**

*Proterhinus* sp., in dead twigs.

*Cis* sp., in dead twigs.

**STRAUSSIA KADUANA****Hymenoptera**

*Microterys kotinskyi* (Fullaway), swept from foliage. A scale parasite.

**Coleoptera**

*Proterhinus* sp., under bark.

*Xyleborus* sp., Ambrosia beetle. Boring in recently dead wood.

**Lepidoptera**

*Celerio perkinsi* Swezey, one reared from larva on leaves.

*Scotorytha* sp., larva on leaves. Failed to rear.

**Hemiptera**

*Tichorhinus* sp., two species on leaves.

*Nesophrosyne* sp., on foliage.

*Aphid*, on foliage.

*Ceroplastes rubens* Maskell, on foliage.

*Saissetia* sp., on foliage.

**Neuroptera**

*Nesomicromus vagus* Perkins, preying on aphids.

*Neotermes connexus* Snyder, in dead wood.

**GOULDIA AXILLARIS****Hymenoptera**

*Eupelmus* sp., swept from foliage.

Eulophid, probably a parasite of *Proterhinus*.

*Polynema rubriventris* Perkins, swept from foliage. A leafhopper egg-parasite.

**Coleoptera**

*Proterhinus* sp., under bark.

Anobiid, larvae in pith and under bark.

*Oodemas* sp., in dead wood.

**Lepidoptera**

*Aristotelia* sp., a leafminer.

**Hemiptera**

*Nysius* sp., on foliage.  
*Nesophrosyne* spp., two species on foliage.

**Neuroptera**

*Neotermes connexus* Snyder, in dead wood.

**Corrodentia**

Undetermined psocid, on bark.

## COPROSMA FOLIOSA

**Coleoptera**

*Dryophthorus declivis* Sharp, in dead wood.  
*Dryophthorus modestus* Sharp, in dead wood.  
*Dryophthorus insignis* Sharp, in dead wood.  
*Oodemas* sp., in dead wood.  
*Cis* sp., in dead wood.  
*Proterhinus* sp., swept from dead twigs, (specimen lost).  
 Elaterid larva, in rotten wood.

**Lepidoptera**

*Hyposmocoma chilonella* Walsm., larva in dead wood.  
*Aristotelia* sp., a leafminer.

**Neuroptera**

*Neotermes connexus* Snyder, in dead wood.

## BYRONIA SANDWICENSIS

**Coleoptera**

*Proterhinus* sp., swept from dead twigs.

**Lepidoptera**

*Semnoprepia* sp., larva in dead wood.

**Hemiptera**

*Nesophrosyne* sp., on foliage.

**Neuroptera**

*Neotermes connexus* Snyder, in dead wood.

## SUTTONIA LESSERTIANA

**Coleoptera**

Undetermined anobiid, larva in dead wood.

**Lepidoptera**

*Eulia* sp., larvae on leaves.  
*Philodorinia auromagnifica* Walsm., a leafminer.

**Hemiptera**

*Nesophrosyne* spp., two species on foliage.

**Orthoptera**

*Banza molokaiensis* Perkins, one pair hiding in webbed leaves.

**WIKSTROEMIA FOETIDA****Hymenoptera**

Figitid, swept from foliage. Probably a parasite of the leafminer.  
*Eupelmus* sp., swept from foliage.

*Anagyrus* sp., swept from foliage. A mealybug parasite.

*Trichogramma minutum* Riley, parasite of *Amorbia* eggs on leaf.  
*Polynema terrestris* Perkins, swept from foliage. A leafhopper egg-parasite.

**Lepidoptera**

\**Euxoa hephaesta* (Meyr.), larva on leaves.

*Amorbia emigratella* Busck, egg mass on leaf.

*Archips postvittanus* (Walk.), larvae on leaves.

*Hypsomocoma chilonella ocellata* Walsm., larvae and pupae in rotten wood.

*Hypsomocoma chilonella venosa* Walsm., larvae and pupae in rotten wood.

**Diptera**

*Agromyza* sp., a leafminer.

**Hemiptera**

*Nesophrosyne* sp., swept from foliage.

*Pseudococcus* sp., on foliage.

**Corrodentia**

Undetermined psocid, on bark.

**Thysanoptera**

Undetermined thrips, under dead bark.

**ANTIDESMA PLATYPHYLLUM****Lepidoptera**

*Scotorythra sygonopa* Meyrick, larva on leaves. Reared.

*Aristotelia* sp. (?), leafminer. Failed to rear.

**Hemiptera**

*Nesodryas* sp., swept from foliage.

*Nesophrosyne* sp., swept from foliage.

*Ceroplastes rubens* Maskell, on leaves.

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\* This is the moth described as *Euxoa wikstroemiae* by Swezey (Proc. Haw. Ent. Soc., IV, p. 377, 1920). Enough specimens have now been reared and collected to show sufficient variation to connect it with specimens of *haephesta*, which species was originally described from specimens collected in the N. W. Koolau Mts., Oahu. The species is now known on Oahu, Kauai and Molokai.

## PIPTURUS ALBIDUS

**Hymenoptera**

*Secodella metallica* (Ashm.), parasite of leafminer.

**Coleoptera**

*Nitidulid*, swept from foliage.

**Lepidoptera**

*Scotorythra* sp., larva on leaves.

*Vanessa tamameamea* Esch., larva on leaves.

*Philodoria floscula* Walsm., leafminer.

**Hemiptera**

*Nysius* sp., on foliage.

*Ilburnia pipturi* (Kirk.), on foliage.

## PELEA MOLOKAIENSIS

**Lepidoptera**

*Opostega* sp., leafminer.

**Hemiptera**

*Hevahева* sp., nymphs in pits on upper surface of leaves.

## BROUSSAISIA ARGUTA

**Hymenoptera**

*Nesoprosopis facilis* Sm., nest in dead twig.

**Lepidoptera**

*Semnoprepia* sp., larvae in dead wood.

**Hemiptera**

*Nesophrosyne* sp., on foliage.

**Orthoptera**

*Banza molokaiensis* (Perkins), hiding among leaves.

## CHEIRODENDRON GAUDICHAUDII

**Coleoptera**

*Dryophthorus squalidus* Sharp, in rotten wood.

*Dryophthorus declivis* Sharp, in rotten wood.

*Dryophthorus modestus* Sharp, in rotten wood.

*Dryophthorus insignis* Sharp, in rotten wood.

**Lepidoptera**

*Spheterista* sp., larvae on leaves.

## TETRAPLASANDRA HAWAIIENSIS

**Hymenoptera**

*Tomocera californica* Howard, scale parasite. Swept from foliage.

*Trichogramma semifumatum* (Perkins), reared from eggs of  
Scotorythra under bark.

**Coleoptera**

*Colpodiscus lucipetens* (Blkb.), in cavities of dead branches.  
*Nesotocus* sp., in dead branch.  
*Dryophthorus squalidus* Sharp, in rotten wood.  
*Cryptolaemus montrouzieri* Muls., predacious on mealybugs.

**Lepidoptera**

*Scotorythra* sp., egg clusters under loose bark.  
*Diplosara lignivora* (Butl.), in rotten wood.

**Hemiptera**

*Nesioniris hawaiiensis* Kirkaldy, numerous on foliage.  
*Siphanta acuta* (Walker), on foliage.  
 Psyllid, an undetermined species very numerous on leaves. Nymphs  
     resembling coccids.  
*Saissetia* sp., on leaves.  
*Pseudococcus longispinus* (Targ.), on leaves.

**Neuroptera**

*Neotermes connexus* Snyder, in dead branches.

## CLERMONTIA GRANDIFLORA

**Hymenoptera**

*Nesoprosopis facilis* Sm., nest in hollow twig.  
*Sierola* sp., swept from foliage.  
*Secodella metallica* (Ashm.), parasite of leafminer.

**Coleoptera**

Carabid, in dead hollow stem.  
 Nitidulid, under bark.  
 Staphylinid, in rotten fruit.  
 Elaterid, larva in rotten stem.  
*Dryophthorus gravidus* Sharp, in rotten stem.  
*Dryophthorus squalidus* Sharp, in rotten stem.  
*Oodemas corticis* Perkins, in rotten stem.

**Lepidoptera**

*Heterocrossa* sp., larvae in fruit.  
*Philodoria* sp. (?), leafminer.  
*Opogona omoscopa* (Meyrick), larvae in rotten wood.

**Hemiptera**

*Saissetia* sp., on leaves.

**Neuroptera**

*Neotermes connexus* Snyder, in dead wood.

## ALYXIA OLIVAEFORMIS

**Coleoptera**

*Proterhinus* sp., swept from dead twigs.  
*Acalles* sp., swept from dead twigs.

**Hemiptera**

*Tichorhinus* sp., swept from foliage.

## FREYCINETIA ARNOTTI

**Coleoptera**

*Atelothrus platynoides* Sharp, at axils of leaves.  
Nitidulid, at axils of leaves.

**Lepidoptera**

*Catamempsis decipiens* Walsm., larvae in crown of living plant.  
*Euperissus cristatus* (Butl.), larvae in pith of dead stems.

**Hemiptera**

Anthocorid, predacious bug.  
*Ilburnia* sp., on foliage.  
*Pseudococcus montanum* Ehrhorn, between leaves of crown.

**Neuroptera**

*Neotermes connexus* Snyder, in dead stems.

## JOINVILLEA ADSCENDENS

**Lepidoptera**

*Omiodes asaphombra* Meyrick, larvae on leaves.

## SMILAX SANDWICENSIS

**Hymenoptera**

*Nesoprosopis facilis* Sm., nest in beetle burrow in dead stem.  
*Sclerodermus* sp., parasite of *Neoclytarlus*.  
*Eupelmus* sp., parasite of *Neoclytarlus*.

**Coleoptera**

*Neoclytarlus* sp., larvae boring in dead stems.  
*Oodemas* sp., in dead stems.  
*Proterhinus* sp., in dead stems.

**Lepidoptera**

*Hypsmocoma chilonella* Walsm., larvae in dead stems.  
*Hypsmocoma insinuatrix* Meyrick, larvae in dead stems.

## ASTELIA VERATROIDES

**Hymenoptera**

*Cremastus hymeniae* Viereck, parasite of *Omiodes* larvae.

**Coleoptera**

Carabidae, two species in axils of leaves.

**Lepidoptera**

*Omiodes scotaea* (Hampson), larvae on leaves.

## MUSA SAPIENTUM

**Coleoptera**

*Polytus mellerborgi* (Boh.), at base of stems. Larvae in corms.  
*Dactylosternum subquadratum* (Fairm.), in decaying stems. A predator.  
*Cryptamorpha desjardinsi* (Guer.), on dead leaves.

**Dermaptera**

*Labia* sp., on the leaves. A predator.

## CIBOTIUM CHAMISSOI

**Coleoptera**

*Pentarthrum prolixum* Sharp, in dead frond stems.  
*Proterhinus* sp., in dead frond stems.  
*Cis* sp., in dead frond stems.

## CIBOTIUM MENZIESII

**Coleoptera**

Carabidae, two or three species in dead frond stems.  
 Elaterid larva, in dead frond stems.  
*Pentarthrum prolixum* Sharp, in dead frond stems.  
*Dryophthorus modestus* Sharp, in dead frond stems.  
*Dryophthorus insignis* Sharp, in dead frond stems.  
*Oudemas* sp., in dead frond stems.  
*Proterhinus* sp., in dead frond stems.

**Hemiptera**

*Oliarus* nymph, in dead frond stems.

## SADLERIA CYATHEOIDES

**Hymenoptera**

*Polynema jassidarum* Perkins, an egg-parasite of jassid eggs.

**Coleoptera**

*Proterhinus* sp., in dead frond stems.  
*Cis* sp., in dead frond stems.

**Hemiptera**

*Nysius* sp., swept from fronds.  
 Mirid, swept from fronds.  
*Oliarus* sp., swept from fronds.  
*Ilburnia* spp., two species, swept from fronds.  
*Nesophrosyne* sp., swept from fronds.

## ASPIDIUM CYATHEOIDES

**Hymenoptera**

*Polynema* sp., parasite of leafhopper eggs.

**Lepidoptera**

*Batrachedra* sp., larvae feeding on sporangia.

**Hemiptera**

*Oliarus* sp., swept from fronds.

*Nesophrosyne* sp., swept from fronds.

GLEICHENIA DICHOTOMA

**Hemiptera**

*Nysius* sp., swept from fronds.

*Reduviolus* sp., swept from fronds.

*Ilburnia* sp., swept from fronds.

*Nesophrosyne* sp., swept from fronds.